



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,211	03/02/2004	Thomas E. Becker	HES 2002-IP-008430U1	1986
28857	7590	12/02/2005	EXAMINER	
CRAIG W. RODDY HALLIBURTON ENERGY SERVICES P.O. BOX 1431 DUNCAN, OK 73536-0440			BOMAR, THOMAS S	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,211

Applicant(s)

BECKER ET AL.

Examiner

Shane Bomar

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 15-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/27, 1/18, 6/18, 3/2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, drawn to a method for sealing a subterranean zone comprising a sealing composition placed in the zone, and heating the composition to accelerate the setting of the composition, classified in class 166, subclass 288.
 - II. Claims 15-22, drawn to a method of performing conformance operations in a subterranean zone comprising a conformance composition for inhibiting the production of water, placing the composition in the zone adjacent the water, and heating the composition, classified in class 166, subclass 288.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are unrelated because Invention I does not require a conformance composition for inhibiting the production of water, it does not need to be placed adjacent a location of water production, and it does not require increasing the viscosity of the composition.
3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Craig Roddy on November 22, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the pumping of sealing composition through a drill string and bit, circulating the excess out of the hole, and removing the drill string must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

Art Unit: 3672

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3,189,089 to Lloyd.

Lloyd discloses a method for sealing a subterranean zone comprising: preparing a sealing composition; placing the sealing composition into the subterranean zone; and heating the sealing composition to accelerate the setting of the sealing composition (see cols. 1-2, and col. 3, lines 31-52). The sealing composition is a cement slurry comprising cement and water, the cement is selected from the currently claimed group, and the cement is inherently Class G since this is notoriously known in the art as a basic well cement. The well casing or pipe, which has been lowered into the well, acts as the heating tool for the method (see, for example, col. 3, lines 53-

Art Unit: 3672

59). It is well known that borehole walls contain, among other things, fractures and/or pores; therefore, it is inherent that the sealing composition would be placed “into” the subterranean zone by flowing into, and filling, these fractures and/or pores when pumped into the annulus between the casing and the wellbore.

9. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 4,489,785 to Cole.

Cole discloses a method for sealing a subterranean zone comprising: preparing a sealing composition; placing the sealing composition into the subterranean zone; and heating the sealing composition to accelerate the setting of the sealing composition (see col. 2, lines 3-43, and col. 4, line 31 through col. 5, line 25). The composition is an epoxy liquid comprising resin, associated hardener and inert filler material, wherein the resin is a condensation product of epichlorohydrin and bisphenol A (see, for example, col. 2, lines 20-34). It is well known that borehole walls contain, among other things, fractures and/or pores; therefore, it is inherent that the sealing composition would be placed “into” the subterranean zone by flowing into, and filling, these fractures and/or pores when pumped into the annulus between the casing and the wellbore.

10. Claims 1, 2, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 4,809,780 to Shen.

Shen discloses a method for sealing a subterranean zone comprising: preparing a sealing composition; placing the sealing composition into the subterranean zone; and heating the sealing composition to accelerate the setting of the sealing composition (see col. 3, lines 46-48, and col. 4, lines 57-66). The composition is, at least partially, latex (see col. 3, lines 55-58). A heating tool is also lowered into the well bore to heat the sealing composition (see Fig. 2).

Art Unit: 3672

11. Claims 1-5 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3,871,455 to Hardy et al.

Hardy et al disclose a method for sealing a subterranean zone comprising: preparing a sealing composition; placing the sealing composition into the subterranean zone; and heating the sealing composition to accelerate the setting of the sealing composition (see claim 1, col. 2, lines 48-58, and the Figure). The sealing composition is a cement slurry comprising cement and water, the cement is selected from the currently claimed group, and the cement is inherently Class G since this is notoriously known in the art as a basic well cement (see col. 6, lines 9-18). Or the sealing composition is an epoxy resin (see col. 6, lines 19-47). Heater 50 is lowered into the wellbore to heat the composition (see the Figure).

12. Claims 1-6, 9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 5,569,324 to Totten et al.

Totten et al disclose a method for sealing a subterranean zone comprising: preparing a sealing composition; placing the sealing composition into the subterranean zone; and heating the sealing composition to accelerate the setting of the sealing composition (see col. 2, lines 13-17, col. 3, lines 19-40, and col. 4, lines 8-30 (especially lines 18-21 for the heating step)). The sealing composition is a cement slurry comprising cement and water, the cement is selected from the currently claimed group, and the cement is inherently Class G since this is notoriously known in the art as a basic well cement (see col. 3, lines 28-40). Water is present in the slurry in the claimed range (see Tables II-IV). The sealing composition also contains an epoxy liquid comprising resin, associated hardener and inert filler material (see col. 4, lines 16-38).

Art Unit: 3672

13. Claims 1-7 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 5,135,577 to Brothers.

Brothers discloses a method for sealing a subterranean zone comprising: preparing a sealing composition; placing the sealing composition into the subterranean zone; and heating the sealing composition by exposure to the formation temperature to accelerate the setting of the sealing composition (see col. 1, lines 42-55, col. 2, lines 36-42, and col. 5, lines 15-24). The sealing composition is a cement slurry comprising cement and water, the cement is selected from the currently claimed group, and the cement is inherently Class G since this is notoriously known in the art as a basic well cement (see col. 3, lines 12-17 and lines 47-62). Water is present in the slurry in the claimed range (see col. 3, lines 63-67). The sealing composition also contains a latex from the currently claimed group (see col. 2, lines 47-63, and col. 3, lines 18-27). The sealing composition is placed in the subterranean zone by pumping the sealing composition through a drill string and bit and further comprising circulating excess material out of the subterranean zone and removing the drill string and bit from the subterranean zone prior to heating the sealing composition, else the drill string would become stuck upon the composition setting (see col. 5, lines 15-24).

14. Claims 1-5, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3,417,816 to Morris et al.

Analogous to what is disclosed by Brothers and Hardy, Morris et al disclose a method for sealing that comprises a cement slurry with an epoxy resin, wherein the sealing composition is pumped through drill string 16 and out bit 18, the string is removed, and a heater 32 is lowered

into the bore (see Figs. 1-4, col. 2, line 53 through col. 3, line 9, col. 4, lines 45-51, and col. 4, line 71 through col. 5, line 16).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Lloyd, Hardy et al, Totten et al, Brothers, or Morris et al in view of US patent 6,330,917 to Chatterji et al.

Any of Lloyd, Hardy et al, Totten et al, Brothers, or Morris et al teaches the cement slurry of claim 3. However, it is not expressly taught that the slurry also contains resins *and* latexes.

Chatterji et al teach a sealing composition similar to the aforementioned references. It is further taught that the sealing composition comprises cement slurry, resins, *and* latexes (see col. 2, line 65 through col. 3, line 2). It would have been obvious to one of ordinary skill in the art, having the teachings of the aforementioned references and Chatterji et al before him at the time the invention was made, to modify the method of sealing taught by the aforementioned references to include the step of combining the cement slurry with the resin and latexes of Chatterji et al, in order to obtain an improved sealing composition. One would have been motivated to make such a combination since Chatterji et al have shown it to be notoriously

Art Unit: 3672

known in the art to add resins and latexes to cement slurries, and because the combination would yield a sealing composition that has high compressive, tensile, and bond strengths (see col. 2, lines 35-41 of Chatterji et al).

17. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole in view of Totten et al.

Cole teaches the method of claims 2 and 9, wherein the sealing composition is a cement slurry, or that the sealing composition contains an epoxy liquid comprising resin, associated hardener and inert filler material, wherein the resin is a condensation product of epichlorohydrin and bisphenol A. However, it is not explicitly taught that the cement slurry contains the epoxy liquid.

Totten et al teach a method of sealing with a sealing composition similar to that of Cole. It is further taught that the cement slurry contains the epoxy liquid (see col. 3, lines 1-27, and col. 4, lines 16-38). It would have been obvious to one of ordinary skill in the art, having the teachings of Cole and Totten et al before him at the time the invention was made, to modify the method of sealing taught by Cole to include the step of combining the cement slurry with the epoxy liquid of Totten et al, in order to obtain a sealing composition that is improved over prior art compositions. One would have been motivated to make such a combination since Totten et al have shown it to be notoriously known in the art to add epoxy resins to cement slurries, and because the combination would yield a sealing composition that has compressive strength and is environmentally safe since less drilling fluid need be disposed of (see col. 2, lines 1-17 and col. 3, lines 15-18 of Totten et al).


Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Slagle et al shows class G cement being heated downhole. Detroit, Hendersen et al, Mani et al, Mehta, Parsons, Peters et al, Powers et al, Totten et al, and Whetstone teach various other sealing compositions and/or sealing methods of particular interest.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:30am to 4:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


David L. Bagnell
Supervisory Patent Examiner
Art Unit 3672

tsb 
November 23, 2005